



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

49

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/099,912	03/14/2002	John H. Oates	0102323-00100	3592
21125	7590	10/05/2007		
NUTTER MCCLENNEN & FISH LLP WORLD TRADE CENTER WEST 155 SEAPORT BOULEVARD BOSTON, MA 02210-2604			EXAMINER VLAHOS, SOPHIA	
			ART UNIT 2611	PAPER NUMBER
			NOTIFICATION DATE 10/05/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket@nutter.com

## Office Action Summary

Application No.

10/099,912

Applicant(s)

OATES ET AL.

Examiner

SOPHIA VLAHOS

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 3-5, 7-11, 13-18, 20-21, 23-25, 27-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, 7-11, 13-18, 20-21, 23-25 and 27-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION*****Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2 & 5 of U.S. Patent No. 7,110,440

Although the conflicting claims are not identical, they are not patentably distinct from each other because:

The differences between claim 1 of 10/099912 and claims 2 & 5 of U.S. 7,110,440 include:

In claim 1 of 10/099912, the set of one or more first processing elements generates an R-matrix, a second processing element generates symbol estimates as a composition of the R-matrix, and a third processing element generates a  $\Gamma$ -matrix.

Art Unit: 2611

In claim 2 of '440, a first processing element generates a  $\Gamma$ -matrix, a set of one or more processing elements generates an R-matrix, and a third processing element generates symbol estimates (based on) as a composition of the R-matrix. Claim 2 of '440 recites a memory where the  $\Gamma$ -matrix is stored, this memory corresponds to the second memory of 10/009912.

Therefore, the difference between claim 1 and claim 2 is the numbering (referred to as a first, second, and third processing elements) of the element(s) that perform the same functions of generating a  $\Gamma$ -matrix, R-matrix, and symbol estimates. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify claim 1 of 10/099912 so that the first, second, and third processing elements are referred to as second, third, and first as in '440.

Furthermore, claim 1 of 10/099912 includes limitations referring to "contiguous locations within the first memory" referring to a first memory coupled to the set of one or more processing elements (that generate the R-matrix). Claim 5 of '440 recites a memory coupled to the set of second processing elements (that generate the R-matrix) and placement of the R-matrix (portions) in the memory (portions placed in contiguous locations of the memory).

Claims 3-4 of 10/099912 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2 & 5 of the U.S. 7,110,440 patent.

Claim 5 of 10/099912 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2-3, & 5 of the U.S. 7,110,440 patent.

Claim 7 of 10/099912 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2,4, & 5 of the U.S. 7,110,440 patent.

Claim 8 of 10/099912 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims not patentably distinct from claims 2 & 5 of the U.S. 7,110,440 patent.

See rationale of used to reject claim 1 above.

Claims 9-10, 21, 23-24, 27, 25 of 10/099912 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims not patentably distinct from claims 2, 4 & 5 of the U.S. 7,110,440 patent.

See rationale of used to reject claim 3 above.

3. Claims 28-29, 11, 13-14, 17, 20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2, 4 & 5 of U.S. Patent No. 7,110,440 in view of Harvey et. al., "DMA Fundamentals on Various PC platforms" National Instruments , April 1991 (pages 1-2).

With respect to claim 28 of instant application 10/099912, claims 2, 4 & 5 do not

Art Unit: 2611

disclose a direct memory access engine (hereinafter "DMA" engine) placing the R-matrix in memory (instead, claim 5 of '440) teaches that each of the processing elements places its portion of the R-matrix, in the memory.

However, a DMA engine is used for data transfer elements, see last paragraph of page 1 through page 2 of Harvey et. al., see the DMA controller. Therefore at the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a DMA engine (controller) as taught by Harvey et. al., to modify claims 2, 4 & 5 of the '440 patent so that high speed data transfer is achieved (see Harvey et. al., second paragraph of "overview" section page).

With respect to claim 29, claim 29 is rejected based on a rationale similar to the one used to reject claim 28 above.

With respect to claims 11, 13-14, 17, 20 these claims are rejected based on a rationale similar to the one used to reject claim 28 above.

4. Claim 15 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2, 4, 3 & 5 of U.S. Patent No. 7,110,440 in view of Harvey et. al., "DMA Fundamentals on Various PC platforms" National Instruments , April 1991 (pages 1-2).

Claim 15 of 10/099912 is rejected based on a rationale similar to the one used to reject claim 13 above. With respect to the additional limitation of claim 13: "a multi-port

switch" this limitation is taught by claim 3 of the '440 patent that performs the same function as the one in claim 15.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SOPHIA VLAHOS whose telephone number is 571 272 5507. The examiner can normally be reached on MTWRF 8:30-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SV

9/28/07

  
**MOHAMMED GHAYOUR**  
**SUPERVISORY PATENT EXAMINER**